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| 09/753,245 | 12/29/2000 | Sung-Hoon Baek | 51876p219 | 8804 |

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EXAMINER

BRANCOLINI, JOHN R

| ART UNIT | PAPER NUMBER |
|----------|--------------|
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2153

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/753,245

Applicant(s)

BAEK ET AL.

Examiner

John R Brancolini

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2004.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This action in response to Amendment filed August 23, 2004.

Claims 1-9 are currently pending in the application.

Drawings

Objections to the drawings are withdrawn due to amendments to the Specification.

Claim Objections

Objections to claims 3 and 8 are withdrawn due to amendment.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Lui et al. (US Patent 5812754), hereinafter referred to as Lui.

In regards to claim 1, Lui discloses an apparatus for a redundant interconnection between multiple hosts and a RAID, comprising:

- A plurality of RAID controlling units for processing a requirement of numerous host computers (Figure 3 shows items 302 A and B, separate RAID controllers).

- A plurality of connecting units for connecting the plurality of RAID controlling units to the numerous host computers (In Figure 3, controller chassis 344 contains a plurality of connecting units, the connections between the local hosts and the host loops, see also col 5 lines 36-40).
- Wherein each of the plurality of RAID controlling units includes a plural number of network interface controlling units for directly exchanging information with the numerous host computers and a network interface controlling unit included in another RAID controlling units, through the plurality of connecting units (each separate RAID unit interacts directly with a host loop, which in turn communicates directly through a port bypass circuit and a serializer/deserializer for communication with the local host, col 5 lines 24-40).

In regards to claim 2, Lui discloses the respective RAID controlling units are connected to the plurality of individual connecting units (Figure 3 shows several individual connecting units connected to the RAID controlling units, see also col 5 lines 36-40).

In regards to claim 3, Lui discloses plural number of the network interfacing controlling units are a first network interface controlling unit being connected to the connecting unit of one side and a second network interface controlling unit being connected to the connecting unit of another side (Figure 3 shows the two separate Raid

controllers, each with a host loop which acts as a network interface controlling unit, as discussed in claim 1).

In regards to claim 4, Lui discloses: the first network interface controlling unit processes the requirement of the numerous host computers (the first host loop is provided for communication to a local host, col 5 lines 36-38); and the second network interface controlling unit is used for communication between the respective RAID controlling units when the respective RAID controlling units are not faulty and the second network interface controlling unit is used for executing a function of the first network interface controlling unit included in the respective RAID controlling units when the respective RAID controlling unit is faulty (when an error is detected, the control of the network interface function can be switched from the first to the second host loop, thereby insuring the fault tolerance is provided, col 6 lines 11-32).

In regards to claim 5, Lui discloses the plurality of connecting units have connection ports more than three, the two connection ports among them being connected to said network interface controlling unit and the rest connection ports thereof being provided as a hub equipment connected with the numerous host computers (in Figure 3, the connection chassis shows a plurality of connecting units, two of the connection ports being used to connect to the host loops, and the rest used in a hub, or switching manner, for the various host computers).

In regards to claim 6, Lui discloses the plurality of connecting units have the connection ports more than three, the two connection ports among them being connected to said network interface controlling unit and the rest connection ports thereof being provided as a network switch equipment connected with the numerous host computers (in Figure 3, the connection chassis shows a plurality of connecting units, two of the connection ports being used to connect to the host loops, and the rest used in a hub, or switching manner, for the various host computers).

In regards to claim 7, Lui discloses the plurality of connecting units have the connection ports more than five, the four connection ports among them being connected to said network interface controlling unit and the rest connection ports thereof being provided as a switch connected with the numerous host computers (in Figure 3, the connection chassis shows a plurality of connecting units, with at least 6 points of connection including the host loops, two of the connection ports being used to connect to the host loops, and the rest used in a hub, or switching manner, for the various host computers).

In regards to claim 8, Lui discloses the RAID controlling unit, the network interface controlling unit and the connecting unit are respectively constructed in pairs, the first network interface controlling unit of a first RAID controlling unit being connected to a first connecting unit, the second network interface controlling unit of said first RAID controlling unit being connected to a second connecting unit, the first network interface

controlling unit of a second RAID controlling unit being connected to the second connecting unit, and the second network interface controlling unit of the second RAID controlling unit being connected to the first connecting unit (in Figure 3, one can see that each of the RAID controlling unit, the network controlling unit [the host loop] and the connecting unit [the chassis back plane individual connections] are in pairs, and the crossover of the fibre wiring allows for the first set of components to communicate with the second set, see also col 6 lines 11-32 for how the bypasses occur between the component sets in case of an error).

In regards to claim 9, Lui discloses apparatus for a redundant interconnection between multiple host computers and a RAID, the apparatus comprising:

- A plurality of connection units for connecting the host computers and the RAID (Figure 3 shows items 302 A and B, separate RAID controllers).
- A first and a second RAID controllers, included in the RAID, each of which having a first network interface controller and a second network interface controller for processing requests from the plurality of the host computers connected through the plurality of the connection units (In Figure 3, controller chassis 344 contains a plurality of connecting units, the connections between the local hosts and the host loops, see also col 5 lines 36-40, additionally figure 7 shows multiple RAID controllers).
- Wherein the first network interface controller in the first RAID controller supplies data to the host computers connected through the plurality of connection units

and processes information transmitted from the second network interface controller in the second RAID controller (each separate RAID unit interacts directly with a host loop via a network controller, which in turn communicates directly through a port bypass circuit and a serializer/deserializer for communication with the local host, col 5 lines 24-40).

- Wherein the first network interface controller in the second RAID controller supplies data to the host computers connected through the plurality of connection units and processes information transmitted from the second network interface controller in the first RAID controller (each separate RAID unit interacts directly with a host loop via a network controller, which in turn communicates directly through a port bypass circuit and a serializer/deserializer for communication with the local host, col 5 lines 24-40).
- Wherein the second network interface controller in the first RAID controller is used for fault tolerance by performing functions of the first network interface controller in the second RAID controller when the second RAID controller is faulty (when an error is detected, the control of the network interface function can be switched from the first to the second host loop, thereby insuring the fault tolerance is provided, col 6 lines 11-32).
- Wherein the second network interface controller in the second RAID controller is used for fault tolerance by performing functions of the first network interface controller in the first RAID controller when the first RAID controller is faulty (when an error is detected, the control of the network interface function can be switched

from the first to the second host loop, thereby insuring the fault tolerance is provided, col 6 lines 11-32).

Response to Arguments

Applicant's arguments as presented in the Remarks section:

1. Lui does not disclose or teach two separate network controlling units included in one RAID controller.

In response to argument 1, the examiner respectfully disagrees with application. As shown in Figure 3, Lui provides multiple RAID controllers. In each controller, multiple, in this case two, network controlling units are shown on the controller backplane. Each of these controller units are directly connected to one of two individual network controlling units on the individual RAID controller, marked on each controller as 326.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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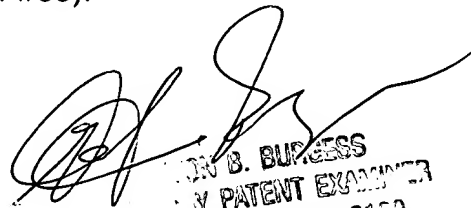
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John R Brancolini whose telephone number is (571) 272-3948. The examiner can normally be reached on M-Th 7am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (571) 272-3949. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


JRB


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